

REMARKS / ARGUMENTS

The Non-Final Office Action of January 19, 2005, has been fully considered by the Applicants. In view of the following discussion, Applicants submit that claims 1-24 are in condition for allowance. Applicants respectfully request that the examiner withdraw the objections and rejections and allow claims 1-24.

A. Status of the Claims

Claims 3-5 and 8-24 stand rejected, and claims 1-2, 6-7, and 11 stand objected to. Claims 1, 8, 11-12, and 16 are objected to based on certain informalities. Claims 3-5, 8-10, and 12-24 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 16-20 and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,578,122 to Crotty in view of U.S. Patent No. 4,200,475 to Kasahara, et al. Claims 21 and 22 are rejected under 35 U.S.C. §103(a) as being unpatentable over Crotty in view of Kasahara, and further in view of U.S. Patent No. 2,393,640 to King. Claim 23 is rejected under 35 U.S.C. §103(a) as being unpatentable over Crotty in view of Kasahara, and further in view of U.S. Patent No. 5,200,292 to Shinozaki, et al.

The Examiner withdrew the finality of the rejection applied to claims 1-2, 7, and 11-15 in the last Office Action in view of Applicants' amendment and arguments filed December 21, 2004. The Examiner withdrew the indication of allowability of claims 16-24 in view of newly cited references.

The Examiner indicated that claims 1-2, 6-7, and 11 would be allowable if written to overcome the informality objections. The Examiner also indicated that claims 8, 10, and 12-15 would be allowable if rewritten to overcome the rejections under 35 U.S.C. §112, second paragraph.

B. The Examiner's Concerns Regarding Claims 1, 8, 11-12, and 16 Have Been Remedied

The Examiner objected to claims 1, 8, 11-12, and 16 for certain minor informalities and suggested changing the phrase "other than nitrate ions" in claims 1, 8, 12, and 16 to "other than said nitrate ions" and changing the phrase "other than nitric acid" in claim 11 to "other than said nitric acid" for clarity purposes. Claims 1, 8, 11, 12,

and 16 are amended herein in the manner suggested by the Examiner. Applicants submit these claims are in condition for allowance. Applicants note that the amendments to these claims are made for the purpose of further clarifying the claim and are not made for reasons related to patentability.

C. Claims 3-5, 8-10, and 12-24 Are Not Indefinite

Claims 3-5, 8-10, and 12-24 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as the invention. The Examiner contends that sulfate or fluoride ions can be used as oxidizing agents and that their inclusion in the claims contradicts the claimed coating composition being substantially free of oxidizing agents other than the nitrate ions or nitric acid as recited in the independent claims. Applicants traverse this rejection.

Applicants submit that sulfate ions and fluoride ions are not oxidizing agents and therefore their inclusion in any claims does not render the claims indefinite. Sulfate ions and fluoride ions are not oxidizing agents. An oxidizing agent is a chemical ion that will cause another chemical ion or compound to lose electrons. That is, an oxidizing agent gains electrons and is reduced. Sulfate ions and fluoride ions are not capable of oxidizing another chemical ion or compound in accordance with the above definition. Rather, they are simply anions that balance out a cation to make a compound and are similar to, for example, salt, i.e., sodium chloride (NaCl). In sodium chloride, the chloride (Cl⁻) is an anion that balances out the sodium cation (Na⁺) to form salt. Similar to the chlorine anion, fluoride anions and sulfate anions do not accept or gain electrons and therefore do not perform the role of an oxidizer.

Further, the references cited by the Examiner do not teach the use of sulfate or fluoride ions as an oxidizing agent. First, U.S. Patent No. 5,338,375 to Benderly does not teach or show that sulfate acts as an oxidizing agent. The Examiner relies on column 2, lines 59-62 of Benderly as an example of sulfate being used as an oxidizer. Viewing the reference as a whole, however, and in particular the entire paragraph upon which the Examiner relies, a person skilled in the art would understand that the iron ion is being used as the oxidizing agent rather than the sulfate ion. Specifically, the Benderly patent teaches that the corrosion inhibitory effect is based on the oxidation state of iron in the iron salt, and that the iron must be in the ferric, i.e., iron (III), state

(Col. 2, lines 42-62). That is, the Benderly patent merely teaches that iron in a +3 oxidation state is the preferred oxidizing agent due to its high oxidation-reduction potential relative to iron in the +2 oxidation state. Benderly does not teach or suggest that sulfate acts as an oxidizing agent. As previously discussed, the sulfate cannot act as an oxidizing agent. Rather, the sulfate is merely a possible anion for the ferric cation.

Second, U.S. Patent No. 5,691,048 to Roberto does not teach the use of fluoride ions as an oxidizer. The Roberto patent is directed to an article of manufacture in which a metal substrate has an undercoating made from a metal compound and a coating containing an autodeposited resin. The autodeposited resin is a coating comprising an acid, an oxidizing agent, and an aqueous dispersed resin. The Examiner relies on column 3, lines 61-64 for teaching the use for fluoride as an oxidizing agent. Lines 61-64 state that the composition preferably contains "hydrofluoric acid and hydrogen peroxide or iron (III) fluoride as the oxidizing agent." The Roberto patent teaches that hydrofluoric acid may be the acid component of a composition and does not teach or suggest that hydrofluoric acid is an oxidizing agent. Rather, similar to Benderly's teachings of iron (III) sulfate, Roberto's teachings of iron (III) fluoride does not teach the use of fluoride as an oxidizing agent. Similar to Benderly, it is the iron (III) cation that is acting as the oxidizing agent and not the fluoride ion. The fluoride ion merely exists as an anion to balance out the iron (III) cation to form a ferric fluoride salt. As previously described, fluoride ion is not capable of accepting electrons and acting as an oxidizing agent.

For at least these reasons, applicants respectfully submit that the references cited by the Examiner do not teach or suggest that either sulfate or fluoride ions may act as an oxidizing agent. Consequently, the presence of sulfate and/or fluoride ions in any of the dependent claims does not contradict the feature that the claimed coating composition is essentially free of oxidizing agents other than the nitrate ions or nitric acid. Therefore applicants submit that claims 3-5, 8-10, and 12-24 are not indefinite. Applicants respectfully request that the rejection of claims 3-5, 8-10, and 12-24 be withdrawn.

D. Claims 16-24 Are Patentable Over the Cited References

The Examiner rejected claims 16-20 and 24 under 35 U.S.C. §103(a) as being

unpatentable over U.S. Patent No. 4,578,122 to Crotty in view of U.S. Patent No. 4,200,475 to Kasahara, et al. Claims 21 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Crotty in view of Kasahara, and further in view of U.S. Patent No. 2,393,640 to King. Claim 23 was rejected under 35 U.S.C. §103(a) as being unpatentable over Crotty in view of Kasahara, and further in view of U.S. Patent No. 5,200,292 to Shinozaki, et al. The secondary references are relied upon for allegedly teaching aspects of the recited dyeing and subsequent rinsing steps recited in the referenced claims. Applicants traverse this rejection.

The combination of references does not teach every element of the recited claims. Claim 16 is amended herein to recite that the coating composition has a ratio of nitrite ions to the combination of chromium (III) and cobalt (II) ions of less than 1.5:1. Applicants have demonstrated in previous responses that that Crotty patent fails to teach a coating composition having a ratio of nitrate ions to the combination of chromium plus cobalt ions of less than 1.5:1. In fact, the Examiner stated in the Office Action that the prior art fails to teach, either alone or in combination, an acidic conversion coating composition with a ratio of nitrate to chromium (III) and cobalt (II) of less than 1.5:1. The secondary references cited by the Examiner do not make up for Crotty's deficient teachings. Therefore, claims 16-24 are not obvious in view of the cited references. Applicants request that the rejections of claims 16-24 be withdrawn.

CONCLUSION

In view of the foregoing, applicants submit that claims 1-24 are in condition for allowance. Applicants respectfully request that the rejections and objections be withdrawn and that a Notice of Allowance be issued.

Respectfully submitted,

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